WUNDERLICH
ARCHITECTURAL
TERRA-COTTA

TERRA-COTTA FACADES
BULLETIN T.C. 2

WUNDERLICH ARCHITECTURAL TERRA COTTA

". . . we must build . . . taking care that . . . we sacrifice no enduring quality, and that the building shall not depend for its impressiveness upon anything that is perishable"

"The Seven Lamps of Architecture" (John Ruskin).

Terra Cotta Facades Bulletin T.C. 2

WUNDERLICH LIMITED

HEAD OFFICE: Cnr. of Baptist and Cleveland Sts., REDFERN, SYDNEY

ARCHITECTURAL TERRA COTTA WORKS: ROSEHILL (Sydney), and SUNSHINE (Melbourne)

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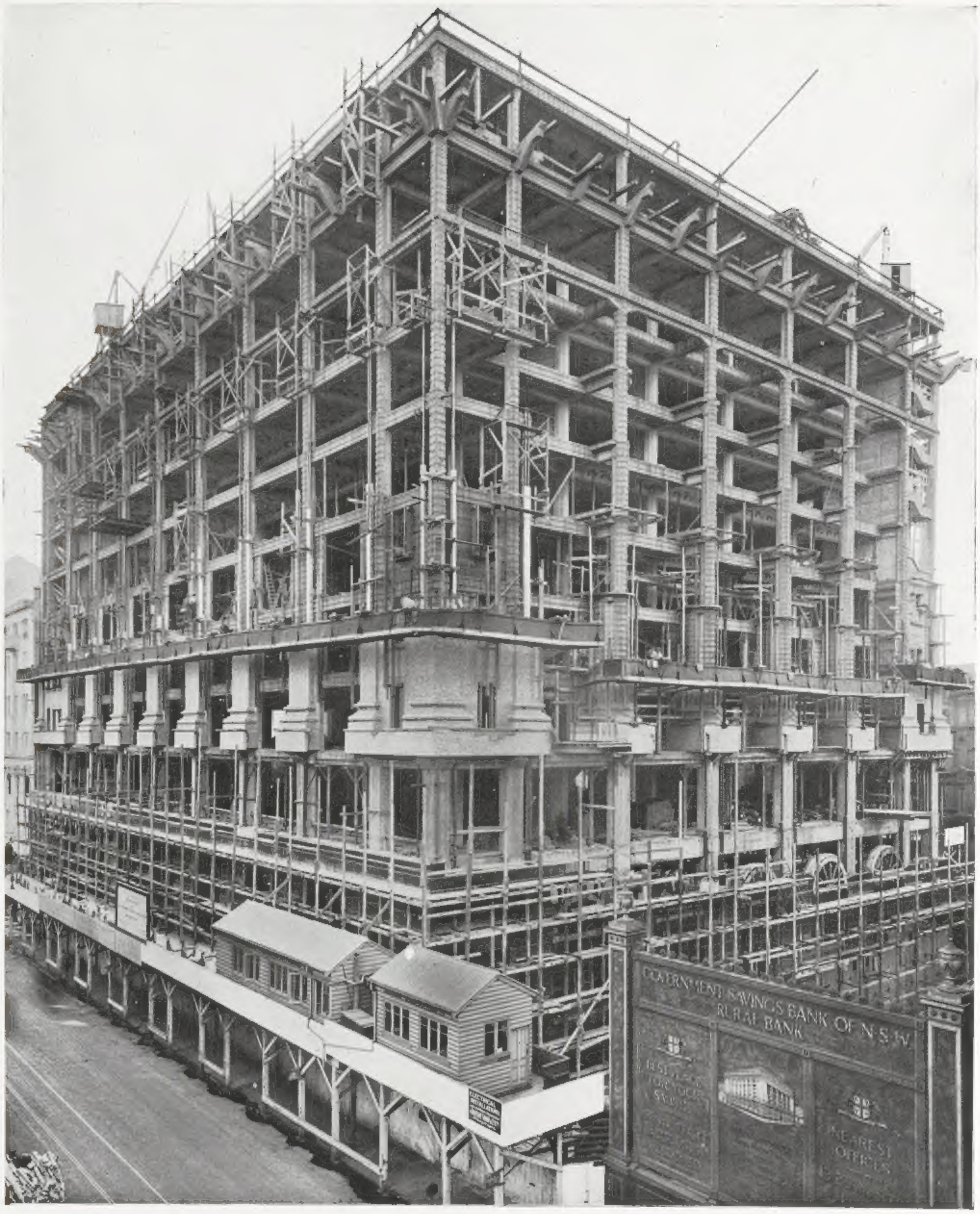


H. E. Ross and Rowe, Architects *Concrete Constructions Ltd., Contractors*

Government Savings Bank of N.S.W., Martin Place, Sydney

Differing from the standard Terra Cotta "facing," which simulates the lines and proportions of masonry, the Wunderlich ceramic finish to this huge structure consists of small units which produce the effect of a mosaic. Pilasters, columns and entablature will receive this ceramic finish, which involves the manufacture of innumerable small blocks, treated on the exposed face with a matt glaze of a delicate shade of lavender.

INTRODUCTION

THE architect who, by means of study or travel, has acquired a knowledge of the building achievements of recent years in England and America, cannot have failed to be impressed by the amazing rise to prominence of Architectural Terra Cotta as a "facing" for city structures. From the obscurity of half a century ago this material has advanced to a position of supreme importance in the building world. So widespread has been its preferment in modern English and American construction, and so outstanding its individuality of appearance, that competent observers have been disposed to describe the important civic centres where the material predominates, as "Terra Cotta cities."

It was inevitable that Architectural Terra Cotta, heralded by such a record of success in countries renowned for their high standard of architecture, should have made a strong appeal to Australians once the facilities for its production were available locally. During the two years that our Rosehill Works have been in existence intense interest has been displayed by architects, and this has found practical expression in the volume of work with which we have been entrusted, which has taxed our facilities to full capacity.

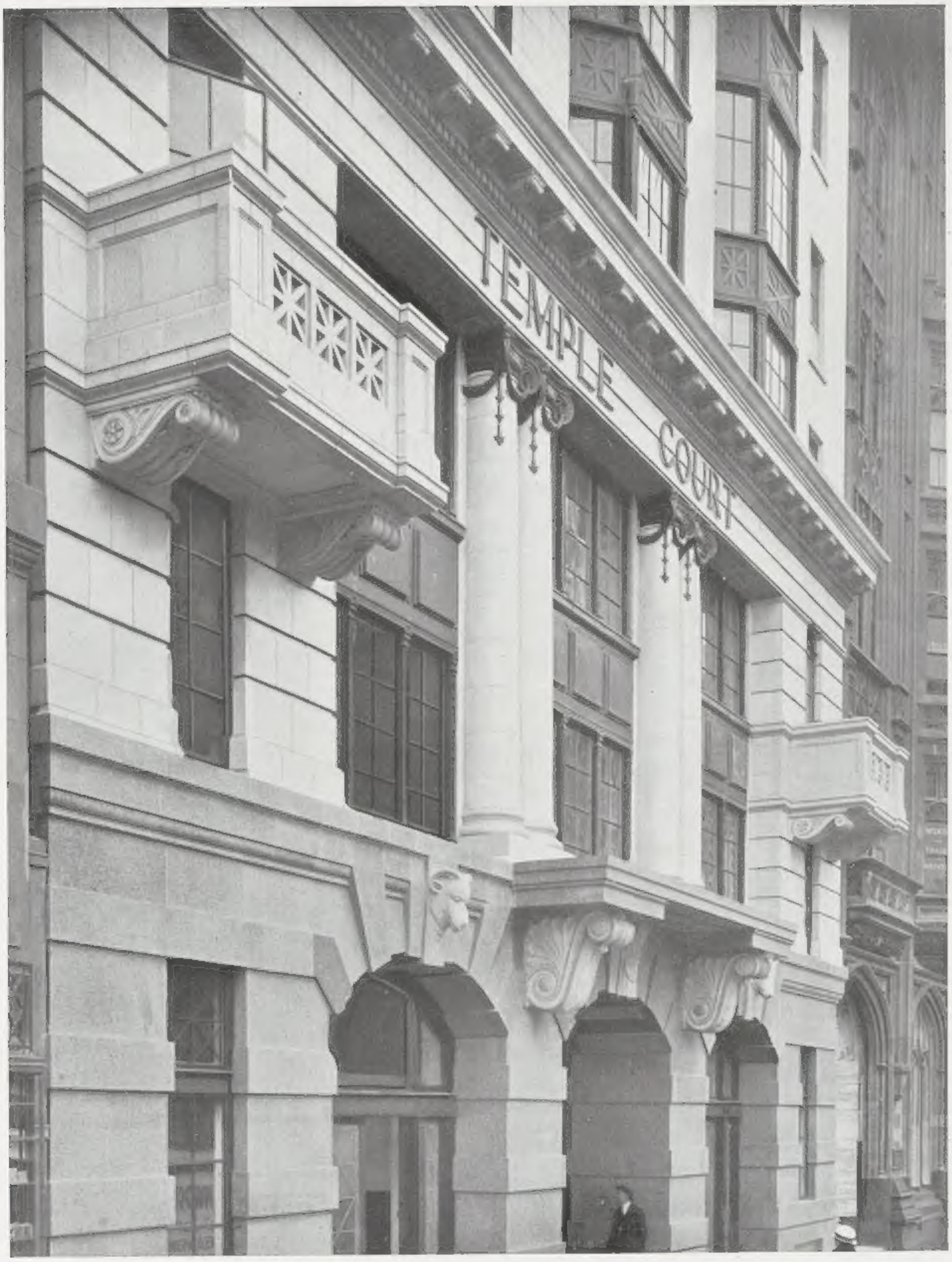
Of the "facing" treatments so far completed, we are now able to present illustrations of five examples. While these illustrations furnish ample evidence of our ability to faithfully and effectively interpret the architect's design in Wunderlich Architectural Terra Cotta, they cannot fittingly portray the distinctive character of the work, for Terra Cotta is essentially a clean, colourful material that loses much of its identity when illustrated in values of black and white. Accordingly, for a true estimation of the possibilities of this medium, as revealed by the five examples, we must suggest an actual inspection of the finished work. But if the views we show cannot reproduce the surface finish and the colour interest of the "facings," they do at least exhibit sufficient contrast in tones to indicate the dominance of a Terra Cotta facade in the average city environment.

With these completed treatments available for investigation, we invite architects who have been in a state of indecision concerning Architectural Terra Cotta, to review their impressions in the light of local achievement. There must eventually arise a genuine interest in any new material offering fresh opportunities for original effects in architectural design; and, in this respect, Architectural Terra Cotta, by reason of its unrestricted colour palette and facilities for ornamental expression, makes an appeal that cannot remain unheeded.

Barlow and Hawkins, Architects *Bolton and Aitken, Contractors*

Temple Court, Collins Street, Melbourne

From the first floor level to the parapet cornice this imposing building is faced with Wunderlich Architectural Terra Cotta, finished cream matt glaze, lightly speckled. Contrasting with the light shade of the Terra Cotta is the warm tone of the Wunderlich wrought bronze treatment to the panels under bay windows and the cornice surmounting the building. Terra Cotta and bronze make an ideal combination.



Barlow and Hawkins, Architects *Bolton and Aitken, Contractors*

Temple Court, Collins Street, Melbourne

A welcome contrast to the uninteresting greyness that characterises so much of the present-day concrete construction, this facade of Wunderlich Architectural Terra Cotta is an investment in permanent colour and finish, ensuring a minimum of maintenance costs and yielding the utmost in advertising value. Clothed with imperishable Terra Cotta, this building will elude the destructive influences of time and weather.

Barlow and Hawkins, Architects *Simmie and Co. Pty. Ltd., Contractors*

Royal Exchange Assurance Offices, Queen Street, Melbourne

Treated to the full extent of nine stories above the granite base, this facade is a classic in Wunderlich Architectural Terra Cotta, the finish being a cream glaze with umber coloured trim. The architects for the work, inspired by the success attending their employment of Terra Cotta for Temple Court, have excelled in their endeavours to give distinction to this towering edifice on a small frontage.

WUNDERLICH
ARCHITECTURAL TERRA COTTA

Bulletin T.C. 2— December, 1926

Terra Cotta Facades

ALTHOUGH Architectural Terra Cotta is a material that has been utilised freely over a period of at least 6,000 years, its widespread employment as the entire "facing" for important structures is largely a development of the last few decades.

A Perfected Material

This extension of the functions of the material is a sequel to the remarkable improvements that have been effected in its form and colour. Prior to the present century, Architectural Terra Cotta was availed of merely to give expression to the moulded or ornamental details of a building, and the colours were usually limited to the unglazed shades that are natural to "fired" clay, such as red and buff. But, in accord with the technical advance of a most pronounced nature that has distinguished all modern ceramic development, the art of imparting coloured glazes to the surface of the Terra Cotta was revived and perfected; while, subsequently, the plain ashlar block of ample size for "facing" purposes was evolved. Consequently, the architect now possesses a medium imposing no restrictions whatever on form or colour in the treatment of facades of buildings.

Achievements Justify its Use

These developments have eventuated with such rapidity that an architect seeking the endorsement of authority or precedent before venturing a facade treatment in Architectural Terra Cotta will find but little guidance in the pages of modern text-books. Rather must he be influenced by a contemplation of the widespread and immediate acceptance that Architectural Terra Cotta has experienced in England and America, and by a review of the advantages which the material offers, as disclosed by the Wunderlich treatments carried out in Australia.

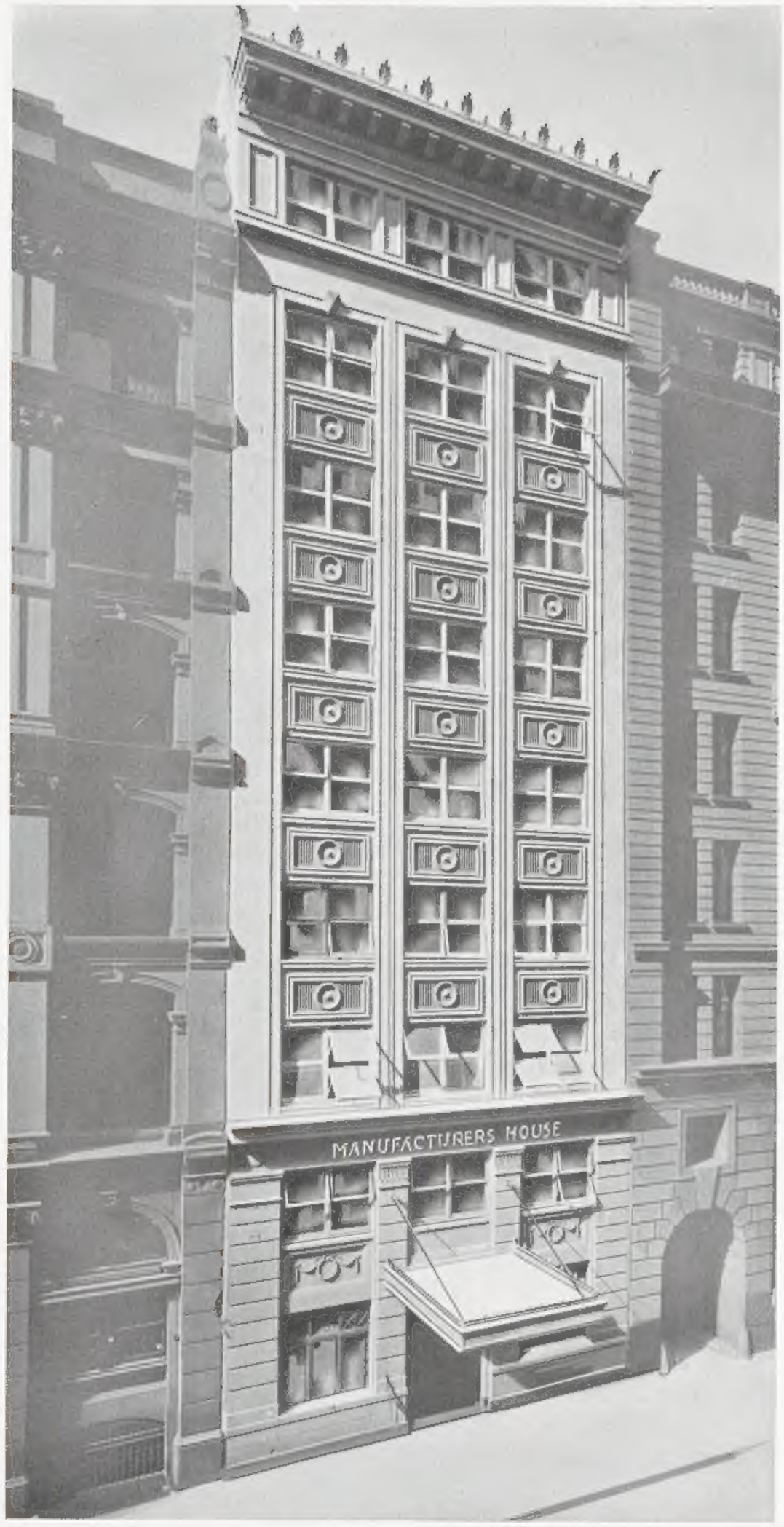
Economy of Ornamental Treatment

This much is evident, that there does not exist a more potential material for revealing the architect's taste and genius in exterior design. Considered in relation to form, it permits of unfettered liberality in the use of ornament, as decorative detail can be reproduced almost as economically as plain design, once the original model of each repetitive unit has been completed. Because of this facility of duplication, the best talent can be employed on the modelling; and a richly ornate treatment which, in a laboriously wrought material, might involve months, or even years, of tedious carving, becomes available in a few weeks when executed in Architectural Terra Cotta.

Wide Range of Surface Finishes

Of even greater significance are the resources for surface finish which the material possesses. In modern Architectural Terra Cotta, matt, as well as bright, glossy glazes are freely obtainable, and in surface textures of the greatest charm. Added to this is the wide variety of imperishable colours which the ceramic chemist has developed, ranging from milky white and cream tints to brilliant

(Continued on page 9)



S. H. Buchanan, Architect *Eastment and Clark, Contractors*

Manufacturers' House, O'Connell Street, Sydney

Economy of treatment, achieved by the frequent repetition of the ornamental units, is a feature of this facade. From the sandstone base to the full height of the seven upper floors the "facing" is of Wunderlich Architectural Terra Cotta of a deep biscuit shade, with bronze coloured matt glaze spandrels under windows. A Wunderlich wrought zinc cornice surmounts the building.

(Continued from page 7)

yellows, warm browns, and bronze; from emerald to dark greens; and from delicate lavenders to bright or deep blues. Such resources have been only sparingly exploited, and an opportunity of utmost promise awaits the talent that will embrace it enterprisingly.

Durable, Fireproof, Cleanly

Apart from such aspects, there is the undisputed durability of Terra Cotta, attested by the countless examples that have remained unimpaired throughout the centuries. Modern progress in the development of ceramic finishes has tended to accentuate this virtue, for the imperishable nature of Terra Cotta is now matched by the unalterable character of the glazed exposed surfaces, which not only offer complete resistance to the disintegrating influences of weather and atmosphere, but also retain their purity of colour and cleanliness of surface, in this respect resembling a vase of porcelain, which requires but an occasional cleansing with soap and water to restore its pristine freshness. Such durability is perpetuated, even under the test of fire, because Terra Cotta, in the process of manufacture, assumes its final form at an exceedingly high temperature, and is accordingly unaltered by the heat of a conflagration.

Suited to Modern Construction

Much as this combination of æsthetic and lasting qualities establishes the claims of Architectural Terra Cotta for consideration on all important building construction, there are, in addition, certain structural advantages that render it particularly applicable to present-day conditions. Where reinforced concrete and steel frame construction prevails, walls lose their structural significance, and a demand is created for a material that lacks the dead weight of solid masses. This requirement Terra Cotta fulfils, as it is merely a shell—usually but little more than one inch thick—and, in comparison with stone or granite of equal cubic content, is less than half the weight; accordingly, its use as a "facing" reduces to a minimum the load on concrete or steel frame, and simplifies the problem of hoisting and handling at the higher floor levels.

Excels Other Standard Materials

No other building material, regarded as a legitimate medium for "facing" purposes, fulfils all æsthetic and practical requirements so faithfully and economically. Certain monumental materials undoubtedly lend themselves to refinement and dignity of treatment, but generally they are costly and more or less subject to degradation through the action of the weather. True, there are alternative types of burned clay and ceramic products that may be entertained for their colour interest and degree of durability, but their very nature and smallness of unit disqualify them from employment in the ornamental elements of a building.

A Necessary Element in Facade Treatment

Thus, in modern Terra Cotta, developed to a degree of perfection previously unapproached, even during the most notable periods of ceramic achievement, the architect discovers a medium of unlimited possibilities, susceptible to any demands of the modeller's art, responsive to each play of fancy in chromatic enrichment, secure in its mastery over the disintegrating forces of nature, and fittingly adaptable to present-day construction. Withal, a medium that is economically available for important buildings of all types. Scarcely known to the last generation, it has imprinted its character and individuality on many of the architectural classics of the present century and contributed fresh resources in colour and permanent surface finish which alone justify its recognition as a necessary element in the treatment of facades.

NOTE All steel angles, pins, hangers wires &c are to be covered for at least 1" all around with 1 to 3 cement grout.

3/8" G.I Anchors & 1/2" Pins at all vertical joints of S[illegible]

No 6 gauge G.I. wires embedded in concrete 6" apart at [illegible] joints.

SECTION THRO' WINDOW

SECTION THRO' PIER

ELEVATION

1/2" G.I pins secured to wall with 3/8" G.I. anchors.

3' - 6 | 7' 8" | 2' - 3½

WUNDERLICH TERRA-COTTA FACADE
MANUFACTURERS' HOUSE, SYDNEY
PLATE 3. SCALE 3/8" = 1 FOOT

Brickwork

Concrete beam

Wood storm [illegible]

Downpipe

3' 6" | 7' - 8" | 2' 3½"

HALF SECTION THRO' WINDOW

HALF SECTION THRO' SPANDRIL

Bonding Terra Cotta Blocks into Brickwork

As each block of Wunderlich Architectural Terra Cotta is made specially for its position on the work, a proper relation can be maintained between the sizes of the blocks and the courses of brickwork, thus simplifying the setting

S. H. Buchanan, Architect — *Eastment and Clark, Contractors*

Manufacturers' House, O'Connell Street, Sydney

The setting of Wunderlich Architectural Terra Cotta presents few difficulties, as the material is adaptable to all standard forms of construction, and we supply the building contractor with accurate drawings locating the exact position of each block of Terra Cotta which the work entails. The above contract involved the anchoring of the blocks to the concrete beam at each floor level and bonding with brickwork between floor levels

L. L. and K. Klingender, Architects *Simmie and Co Pty. Ltd., Contractors*

Shopfront, Pauline et Cie, Melbourne

A colour scheme of delicate lavender, relieved by the cream glaze of the frieze panels, contributes to the impression of dignified restraint that pervades this Wunderlich Architectural Terra Cotta treatment to a remodelled shopfront. There is a most pronounced business value in the new opportunities which Terra Cotta provides for unique and impressive effects in store-front design.

The Investment Value of Architectural Terra Cotta

CONSIDERED from the point of view of an investment, Architectural Terra Cotta is a material that possesses outstanding qualifications. The fact that it can be employed to yield the utmost in both initial and subsequent economy greatly influences its prolific use in modern construction, for investors in valuable city sites recognise the wisdom of erecting buildings worthy of their locations, and welcome Architectural Terra Cotta as affording a degree of beauty and dignity in exterior design such as would be unattainable with any other standard material, excepting at excessive cost.

Repetition Means Economy

A review of the process of manufacture discloses the source of Terra Cotta economy—the facility of reproduction. Blocks that are identical in shape and size can be pressed from the same mould; and this advantage over the methods necessary for a non-plastic material is greatly emphasised where recurring ornament prevails in the design.

Adaptability and Cleanliness

Apart from this initial benefit, Architectural Terra Cotta offers sound economy in its ready adaptability to modern construction, and its elimination of maintenance expense

Advantages Summarised

The advantages of Terra Cotta from the aspect of an investment may be summarised as follows:

1. It permits of unique, outstanding facades, at a lower cost than would be entailed in achieving similar distinction with other materials.
2. It can be fixed speedily, making the building available in the shortest possible time. Where the occasion demands, setting can proceed simultaneously at various levels.
3. It seldom requires attendance; never frets, fades, discolours, nor demands painting—therefore maintenance is negligible.
4. It keeps a building new, thus assuring book value at any time. Any deterioration in appearance, due to dust or smoke, is readily put right, at small cost, with soap and water.
5 It is fire-proof, and will not alter in nature nor become a total loss in the event of fire within or adjacent to the building.
6. It provides remarkable advertising value if the design is only a fraction as attractive and novel in colour interest and ornamental expression as the material admits of.

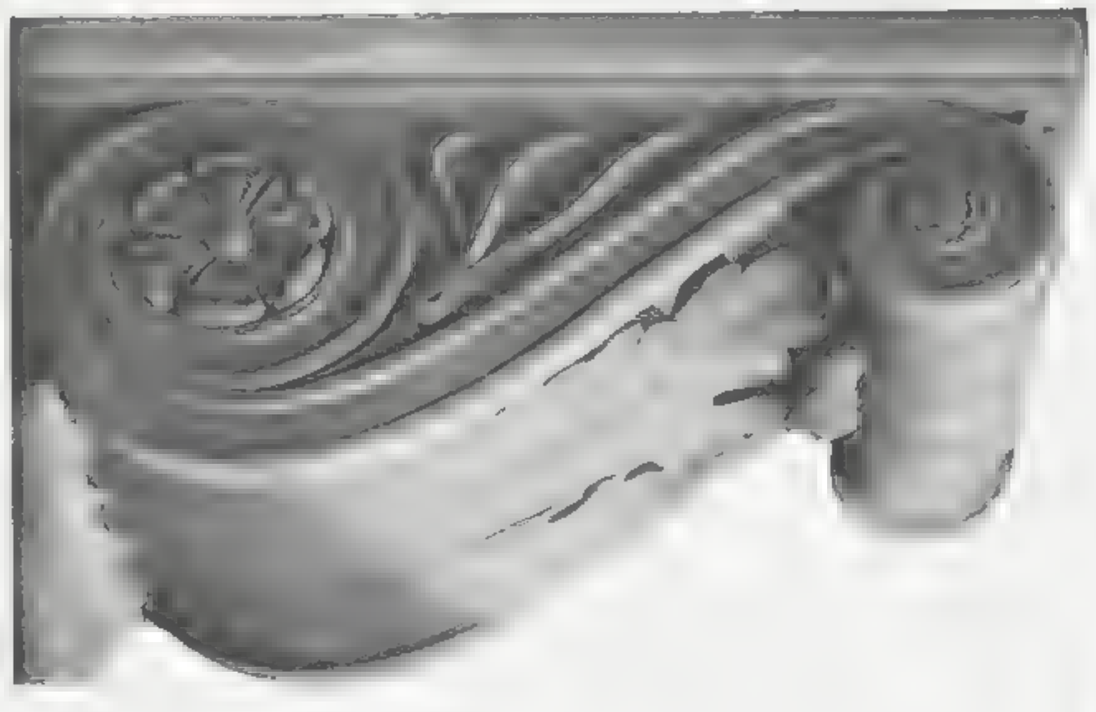
Evidence of Investment Value

Perhaps no greater proof exists as to the investment value of Architectural Terra Cotta than is furnished by the sky-scraper construction in American cities. Many of these buildings, such as the Woolworth in New York, and the Wrigley in Chicago, have involved an expenditure ranging from one to two millions of pounds; hence there is reason to credit that the qualifications of each material offering were carefully appraised from the financial viewpoint before Architectural Terra Cotta was chosen to give outward expression to the architectural conception. Somewhat more than half of the visible exterior of New York's towering skyline is Architectural Terra Cotta, and statistics reveal that the use of the material has more than doubled in the past two years.

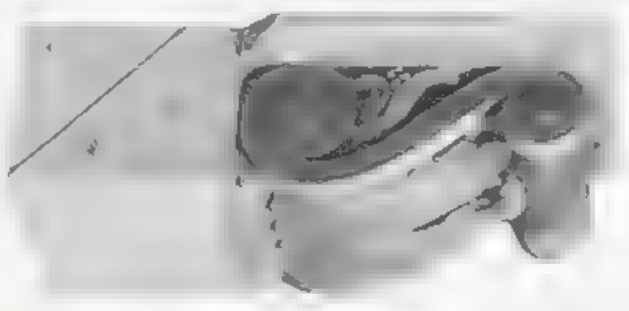
Economy of Local Production

With the establishment of the Wunderlich Works in Sydney and Melbourne, all economic obstacles to the employment of Architectural Terra Cotta in Australian building construction have been removed, and the volume of contracts, both completed and at present in hand, indicates that architects are disposed to benefit by the facilities now at their command.

WUNDERLICH LIMITED, MANUFACTURERS OF ARCHITECTURAL TERRA COTTA



All modelling of ornamental detail is subject to inspection and approval by the architect concerned, to whom a photo of the model is forwarded if a personal visit is impracticable.

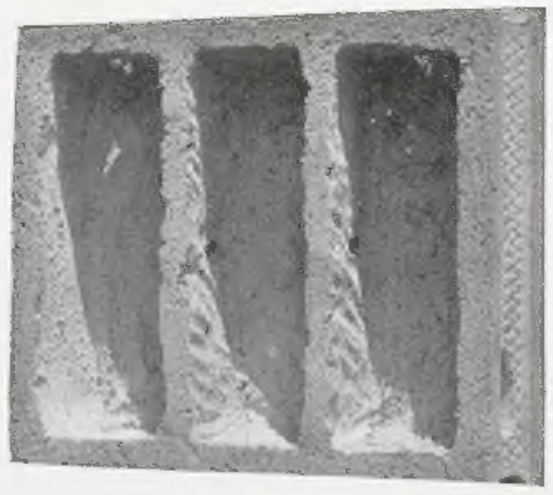


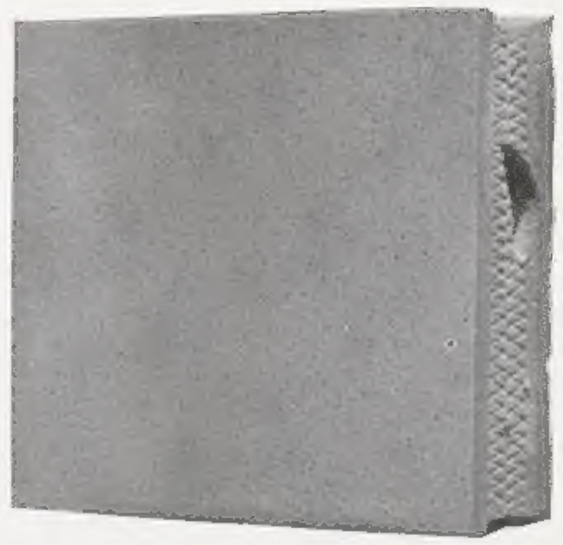
These illustrations are to an approximate scale of 1¼ inches to the lineal foot.

The facility with which ornamental units may be produced, once the original model and mould are made, is reflected in the moderate cost of Terra Cotta decorative features, which may accordingly be repeated with freedom in facade design.

Clay Models of Consoles and Modillion- Temple Court, Melbourne

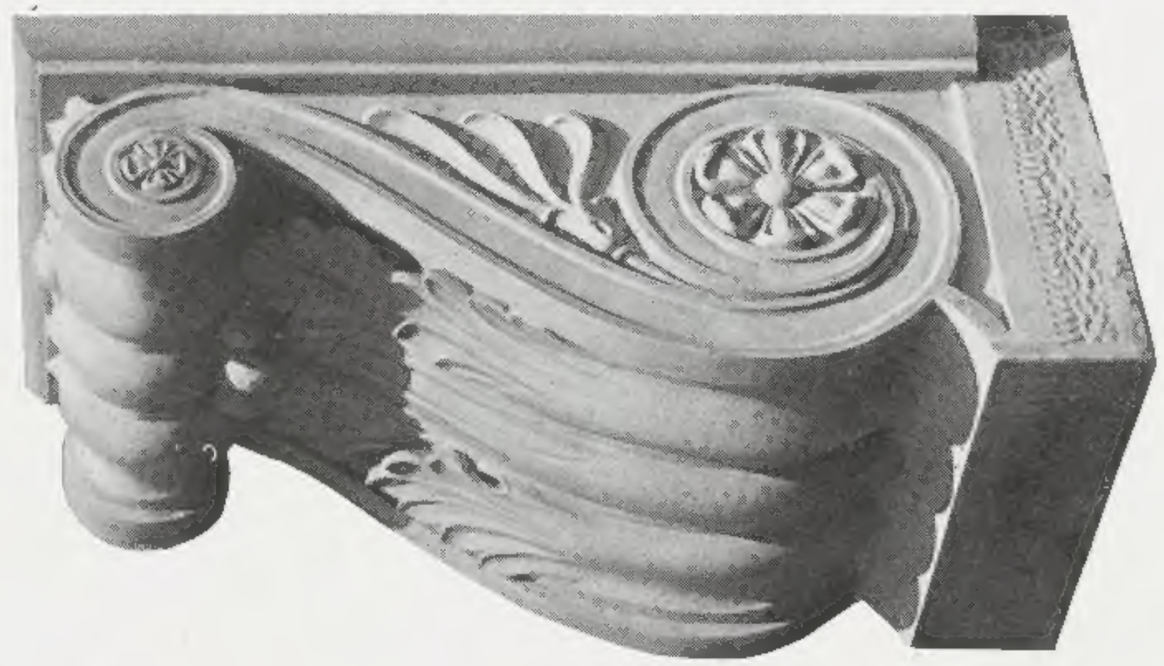
While wet and soft, clay yields alike to the most sensitive and the most vigorous touch of the modeller, thus affording pertect facilities for true and sympathetic interpretation of the architect's design From the completed clay model a plaster mould is prepared, and in this the Terra Cotta blocks are formed.





On the right we display a front view, and on the left an illustration of the reverse face of an ashlar block of Terra Cotta. The actual measurements of this block are 18 inches wide, 15½ inches high, and 4 inches deep, the latter being the standard dimension "on the bed" for Wunderlich Architectural Terra Cotta. Note the voids in the block, and the intermediate ribs for stiffening purposes. Holes for receiving the tie-wires, that secure the Terra Cotta to the wall, appear in the top of the block, also in the centre of each rib. In the case of brick walls, the tie-wires may be dispensed with, and the brickwork bonded into the voids in the blocks.

Wunderlich Architectural Terra Cotta is manufactured hollow, its thickness averaging about 1in. to 1¼in. Because of this, it is admirably suited to the construction of projecting cornices, string courses, or balconies, as ornamental units are comparatively light in weight and do not require a heavy superstructure nor a complicated system of anchoring to secure them safely in position. In this respect Terra Cotta has an advantage over solid materials.



For achieving decorative interest in the treatment of facades, Architectural Terra Cotta is the logical material, not only because of its free-flowing plasticity, but also by reason of the resources it offers for the introduction of texture and colour. Modelled detail in Terra Cotta is given greater emphasis by the use of glazed colours, a frequent instance of this being the application of deep tones in the recesses of the ornament in order to strengthen the natural shadows.

Plain and Ornamental Terra Cotta—Temple Court, Melbourne

Although pressed in a mould, ornamental Terra Cotta retains the character and spirit of the original clay model, as each part of the ornament is touched and pointed by hand after pressing. Elaborate embellishment, which, in a carved material, would be inordinately costly, is commercially practicable in Architectural Terra Cotta.

Estimating and Delineation

During the preliminary stages of any work involving Terra Cotta, architects will find the following information of service:

APART from stating that the cost will compare favourably with that of other standard materials, for a simple design, and amount to appreciably less for an ornamental treatment, we cannot furnish any reliable indication as to the expenditure which the employment of Wunderlich Architectural Terra Cotta will involve. Each piece is made for a specific position on a building, and there are numerous factors that affect the price, such as the size of the entire work, the quantity of repetitive pieces, the extent of the ornamental detail, and the surface finish and colour scheme desired.

Estimates Based on Drawings

Accordingly, we must estimate separately each contract for Terra Cotta, basing our price on the architect's design. For this purpose we should be supplied with scale plans, elevations and sections, which should be supplemented by clear indications as to the extent and character of the modelling and colour scheme involved. If the entire "facing" is not to be executed in Terra Cotta, the actual portions required of us should be defined.

Early Co-operation is Desirable

Benefit may accrue from enlisting our early co-operation, as we may be able to suggest alterations which, without detracting from the design, will effect economies in the manufacture of the Terra Cotta. It is important that the whole question of the Terra Cotta should be settled before the structural elements of the building are finalised, as all necessary channels, angles, brackets, hooks, clips, etc., must be included in the structural engineer's scheme, and built into the building during the course of its erection.

Size Limitations

In designing a Terra Cotta treatment it is essential to bear in mind that there is a limit to the economical size of a block. The usual depth on the bed for "facing" blocks is 4 inches, and a good working size for ashlar is from 16 to 20 inches long by 12 to 15 inches high. Frequently it is necessary to make cornice, string course and ornamental blocks somewhat larger, but, by limiting the sizes to those mentioned, architects will simplify the handling on the job and minimise the possibility of twisting and warping during manufacture.

Economy in Standardisation

An endeavour should be made to standardise the sizes of blocks, where this is consistent with good design, for greater economy in manufacture will result. Models and moulds have to be made for each different shape, and the greater the number of pieces of any particular shape, the cheaper each piece will become. Awkward projections and pieces of irregular shape should be avoided.

Enquiries Invited

At our Sales Branch in each State of the Commonwealth we have a staff possessing a wide knowledge of Architectural Terra Cotta, and enquiries will be dealt with courteously and intelligently. Extensive works for the manufacture of the material have been established at Rosehill (Sydney) and Sunshine (Melbourne), and both are now in full operation.

WUNDERLICH LIMITED, MANUFACTURERS OF ARCHITECTURAL TERRA COTTA

TRADE WUNDERLICH TERRA-COTTA MARK

An Australian Product,
manufactured at
Roschill, N.S.W., and
Sunshine, Victoria.

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